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Cooperative State - Federal

HOG CHOLERA ERADICATION PROGRAM

PROGRESS REPORT 1972

415223

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COOPERATIVE STATE-FEDERAL HOG CHOLERA ERADICATION PROGRAM, PROGRESS REPORT 1972

INTRODUCTION

Calendar year 1972 became a year of emergency for the National Hog Cholera Eradication Program. Begun in late 1962, the Cooperative State-Federal program had, with the help of industry, succeeded in reducing the incidence of this disease to an all-time low by late 1971 and early 1972. Progress looked most encouraging.

Early in the second half of 1972, however, outbreaks in the Southeast and Midwest became so serious that Secretary of Agriculture Earl Butz declared hog cholera a national emergency. The emergency program, announced in October, had the stated objective of "protecting the consumers' supply of pork products and safeguarding the Nation's \$4.5 billion pork industry." Its aim, in short, was to bring the eradication program to a speedy and successful conclusion.

OUTBREAK INVESTIGATION

The 205 hog cholera cases confirmed in 1972 marked a 74 percent increase over 1971's record low of 118 confirmed cases. The 1972 total was substantially lower, however, than the 1,481 confirmed cases in 1969 -- the highest number recorded since comprehensive reporting began in 1964. An estimated 5,000 to 6,000 cases were occurring annually before the first nationwide eradication efforts got underway in late 1962.

The following are the number of suspicious and confirmed cases for 1965 through 1972, plus confirmation rates for each of the years:

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
Suspicious cases number	1,701	1,499	3,143	4,553	6,484	5,716	3,878	5,025
Confirmed cases number	881	534	854	822	1,481	679	118	205
Confirmation rate, percent	52	36	27	18	23	12	3	4

The number of suspicious cases investigated was up from 3,878 in 1971 to 5,025 in 1972, a 30 percent increase. Officials say that a greater effort at investigating and reporting is needed to achieve eradication at an early date.

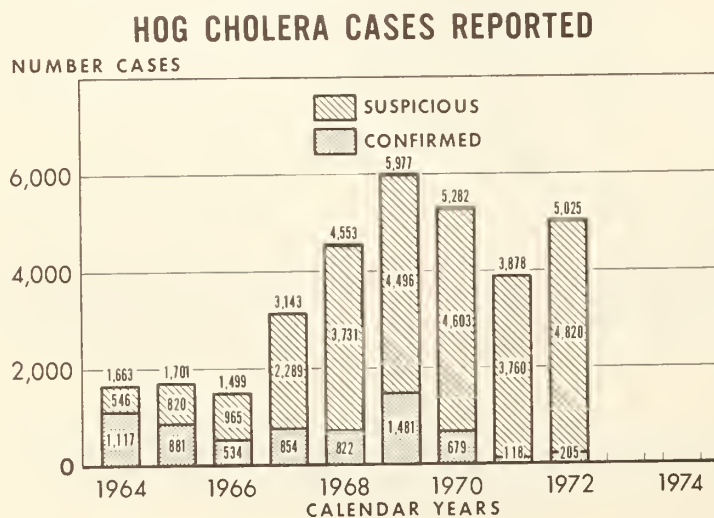
In 1972, positive cases were 4 percent of the total suspicious cases reported, compared with a 3 percent confirmation rate in 1971. This means

that 24.5 suspicious cases were investigated for each case confirmed in 1972, compared with 32.8-to-one ratio of suspicious-to-confirmed cases in 1971. While the 1972 confirmation rate is not quite as encouraging as the year before, it reflects a vastly improved situation over 1964 when nearly every suspicious case investigated proved to be hog cholera.



The next chart lists probable sources of hog cholera infection, expressed in percent, for years 1964 through 1972:

	<u>Interstate</u>	<u>Intrastate</u>	<u>Garbage</u>	<u>Vacci- nation</u>	<u>Area Spread</u>	<u>Undetermined</u>
CY 1964	3 %	18.2%	3.2%	8.5%	25.1%	42%
CY 1965	2	23.2	5	10.1	25	34.7
CY 1966	2.2	14.8	7.1	29	24.9	21.9
CY 1967	1.2	16.5	5.3	31	25.9	20.1
CY 1968	6.5	33.1	12.3	8.6	30.4	9.1
CY 1969	9.8	35.8	8.2	1.5	34.1	10.6
CY 1970	4.1	27.4	11.1	.3	44.3	12.8
CY 1971	1.7	33.8	14.4	2.5	22.9	24.6
CY 1972	6.8	24.5	18.1	----	34.3	16.1

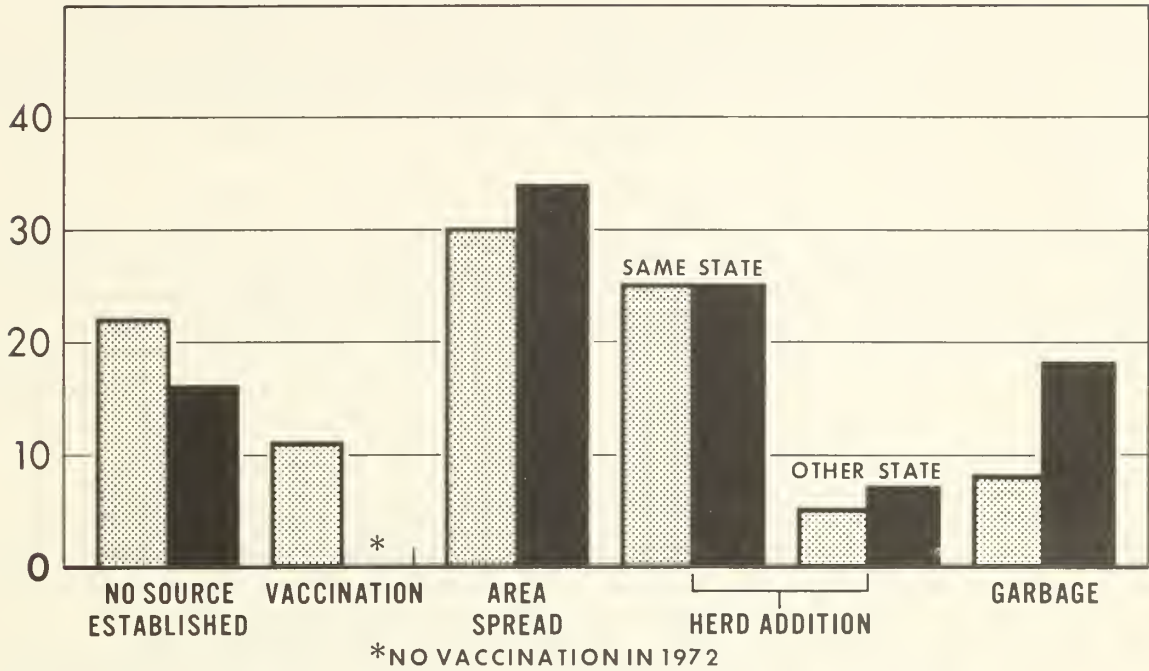
It should be noted that garbage-origin cases continued to rise during 1972 in ratio to other sources of hog cholera cases. The increase in area spread in 1972 is attributed to the Indiana outbreaks when flies are believed to have contributed to the problem.



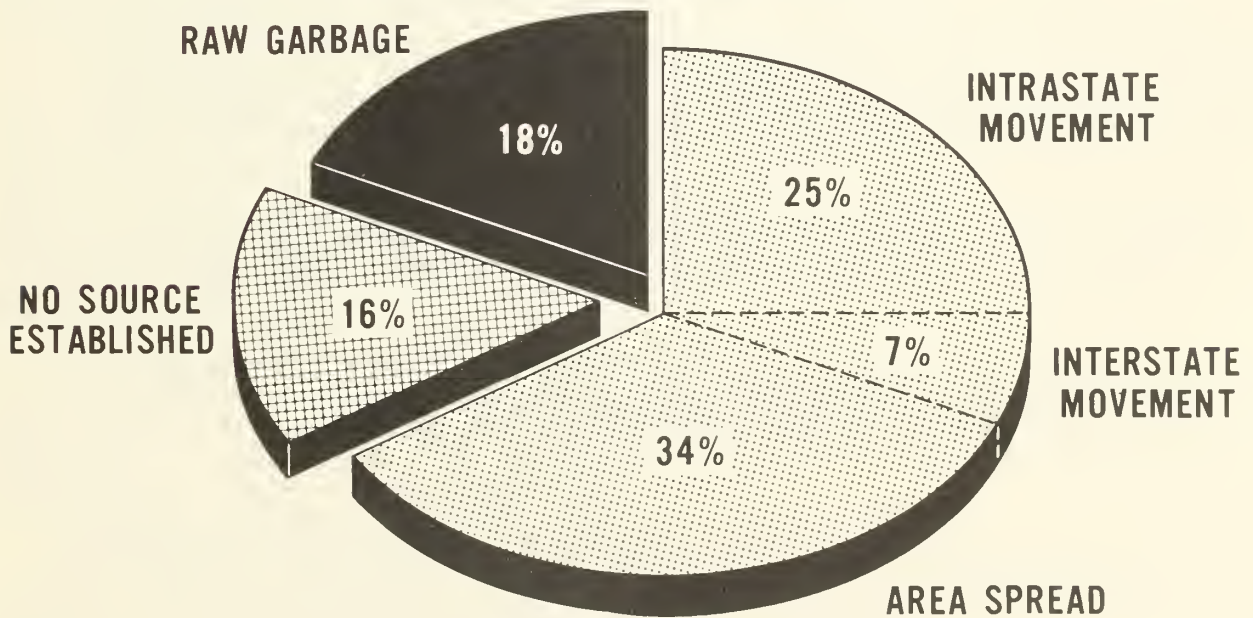
SOURCES OF HOG CHOLERA CASES

Average for Calendar Years 1964 thru 1971 
 1972 

% OF CONFIRMED CASES



METHODS OF SPREAD



BASED ON INVESTIGATIONS COMPLETED
 CALENDAR YEAR 1972

PROGRAM OPERATIONS

The year 1972 began with a State-Federal task force performing tracebacks from a southern Texas livestock sale, following disclosure of a highly virulent hog cholera outbreak there in mid-December. Operating from Harlingen, the force of 50 diagnosticians and inspectors checked every herd in 16 counties at least once and hundreds more herds in 38 additional counties. (All markets in the 55-county area were surveyed, and all reports of sick hogs were investigated.) January's total of 22 confirmed cases was all in Texas.

By mid-February, the situation appeared to be under control. Hog cholera was down -- but not out. In March, the disease broke out again in North Carolina, and a task force began eradication activities in six eastern counties there.

In a memorandum to field offices in May, Dr. E. E. Saulmon, Deputy Administrator of APHIS Veterinary Services, called for action to correct poor market inspections, illegal movements of feeder and slaughter swine, and improper cooking of garbage fed to swine. These factors had figured in recent cases in Georgia, New Jersey, North Carolina, South Carolina, and Texas. Dr. Saulmon invited attention to additional problems needing correction--in reporting of suspicious cases, the less than 100 percent inspection of garbage feeders in some States, and the diversion of cull and lightweight slaughter swine.

Evidence that hog cholera was still around was confirmed in June when a meat inspector at a Florida packing plant identified hog cholera lesions in a slaughter hog. Laboratory tests confirmed hog cholera, and a traceback was ordered on all 194 swine in a shipment from four buying stations in Georgia and the Carolinas. However, no further infection was found.

Meanwhile, Texas experienced 15 more cases, March through June, with most of them occurring in the previously affected southern counties.

In the first half of the year, over 80 percent of the confirmed hog cholera cases (38 out of 58) occurred in Texas. Second high in incidence was North Carolina, with 10 cases during the first six months.

July's eight cases were scattered throughout several States and appeared to be isolated, giving little hint of things to come during the remainder of the year.

During the last six months, a total of 147 positive cases were reported with the bulk of them coming in August (15), September (54), October (33), and November (19). December's total equaled July's -- eight positive cases.

A hog cholera fuse was set off in August, and the explosion came in September. September's 54 cases were the most for any month in over two years. Also, hog cholera was breaking out in two of the heavily populated swine-producing States of the Midwest -- Indiana and Ohio.

In a mid-September memorandum to all Veterinary Services field stations, Dr. Saulmon reviewed the findings of an in-depth study on problems relating to recent hog cholera outbreaks and outlined specific corrective actions to be taken: These actions were to be in addition to those required by eradication program standards under current regulations. Dr. Saulmon's memorandum called for tighter regulatory action in such areas as garbage feeding, marketing of swine in infected States, shipping of breeder swine, and interstate shipping of slaughter swine.

Significantly, the memorandum also called for full-time veterinary inspection at all feeder pig sales in infected States.

On October 5, APHIS amended import regulations to prohibit the importation of live hogs and fresh pork from countries where hog cholera is known to exist. Such imports were previously prohibited from countries known to be infected with foot-and-mouth disease and African swine fever. The change adds hog cholera-infected countries to the list of nations where the restriction applies.

Commenting on this change, Dr. Francis J. Mulhern, Administrator of APHIS said: "The recent outbreak of hog cholera has reemphasized the difficulty of eradicating this disease from the United States. While our former regulations were considered adequate to protect United States producers from foreign swine diseases in general, as we approach the point of eradication of hog cholera, we must ensure that all potential sources of infection have been closed off."

In the 100-day period counting from July 1, 99 cases of hog cholera were found in 14 States: Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Mississippi, Nebraska, New Jersey, North Carolina, Ohio, South Carolina, Tennessee, and Texas -- and Puerto Rico.

This flareup caused USDA to remove "hog cholera Free" designations from Georgia, Indiana, Kentucky, Nebraska, Ohio, and Tennessee. South Carolina preceded these States by losing its "Free" status in May.

With this situation -- and with the serious outbreaks of hog cholera in Midwestern and Southwestern States -- Secretary Butz declared a national emergency on October 11. He stressed that emergency action was needed to provide for speedy eradication of the disease and thus prevent further losses which might otherwise greatly decrease the supply of pork moving to United States consumers.

The two hardest hit Midwestern States were Indiana and Ohio. The disease was found in Darke County, Ohio, on August 26; and by the time the final quarantine was lifted in December, 8,000 hogs had been destroyed. To indemnify Ohio producers, USDA paid \$404,648 while the Ohio Department of Agriculture paid \$51,336.

Indiana suffered an even more widespread infection. Hog cholera was found in that State on September 1, and by the time the final quarantine was lifted in December, 19,665 hogs had been found infected or exposed to hog cholera and destroyed. Over 17,000 hogs were condemned in Carroll County alone. USDA paid \$550,919 in indemnities to Indiana producers. The \$332,167 paid by the State brought the total indemnity payment to \$973,253 in Indiana.

The spread of disease into Indiana and Ohio occurred when sick hogs moved through livestock markets. To help combat future outbreaks of this kind, the Advisory Committee recommended that Federal quarantines and state-wide "hold" orders be imposed on the movement of all swine whenever an outbreak occurred involving hogs that had moved through a market.

These quarantines and hold orders would remain in effect until tracebacks on all market movements involved in the possible spread of infection were completed. As soon as the tracebacks were done, general restrictions on movement would be lifted; and individual State and Federal quarantines would be placed on areas shown to be infected.

This recommendation was followed up in December when a Federal quarantine and a state-wide hold order were issued for the entire State of New Jersey. A week later, the same measures were taken in Pennsylvania when movements of swine from a known infected garbage feeding operation in New Jersey were traced to and through two livestock markets in Pennsylvania.

The year closed with hog cholera eradication continuing on an emergency footing. Under the national emergency, the Secretary is authorized to acquire funds and personnel necessary to carry out an all-out disease eradication campaign. Besides the 205 positive cases, there were 428 exposed cases disclosed during 1972. Involved was a total of 90,248 animals destroyed to prevent further spread of infection. Total Federal indemnity payments came to \$2,664,919. State indemnity payments totaled \$1,254,330.

COUNTIES IN WHICH FEDERAL HOG CHOLERA QUARANTINES WERE IN EFFECT WITHIN CALENDAR YEAR 1972



REGULATION CHANGES

Two regulation changes, not already mentioned, were put into effect in 1972. In February, hog cholera regulations were reissued under Title 9, Part 76, Code of Federal Regulations, in a new format setting forth the program standards in clear, concise language. Definitions were revised, and provision was made for Phase IV, and Hog Cholera Free States to retain their status when isolated, primary cases occur and infected herds are promptly destroyed. The most extensive format change covers interstate shipping rules: Each type of permitted swine movement was described, followed by the restrictions for that type of movement.

In connection with the Secretary's emergency declaration, indemnity regulations were revised, effective October 11, to increase the Federal share of indemnity which may be paid for swine destroyed because of hog cholera in States not in Phase IV or "Free" status, from 50 percent to 75 percent of the appraised value.

ERRATA SHEET FOR APHIS 91-11, "Cooperative State-Federal Hog Cholera
Eradication Program, Progress Report 1972," Issued July 1973

Change paragraph 2, page 6, to read:

The two hardest hit Midwestern States were Indiana and Ohio. The disease was found in Darke County, Ohio, on August 26, and by the time the final quarantine was lifted in December, 6,000 hogs had been destroyed. To indemnify Ohio producers, USDA paid \$202,648 while the Ohio Department of Agriculture paid \$51,336.

1972 REVIEW OF HOG CHOLERA
BY REGIONS

Eastern Region -- Confirmed Cases

Kentucky - 12	New York - 0
Maine - 0	Ohio - 18
Massachusetts - 0	Pennsylvania - 3
Michigan - 0	Vermont - 0
New Jersey - 16	West Virginia - 0

One observer said this region was beginning to think it was "home free" on hog cholera -- and then there was Kentucky ... and Ohio. Spread of disease through shipments was rapid and extensive before it was detected. If there's a lesson here, it's this: Just because things are looking good is no reason to stop looking. New Jersey is an example of what can happen when outbreaks of hog cholera become widespread. In a month or two, there's a very great danger of the disease showing up in one or more of the States with a large garbage-feeding industry. Pennsylvania's cases were related to the new Jersey outbreak.

Southern Region -- Confirmed Cases

Alabama - 0	Georgia - 6	South Carolina - 6
Arkansas - 0	Louisiana - 2	Tennessee - 6
Delaware - 0	Maryland - 2	Virginia - 0
Florida - 2	North Carolina - 33	Puerto Rico - 4

Inadequate controls over movements and lack of identification to permit traceback were the main problems here, especially with regard to light-weight and "junk" hogs. One APHIS official recently noted that it's too expensive nowadays to market "junk" animals through regular trade channels. He cited an example in Georgia where two hogs that sold for 50 cents each eventually cost the State \$100,000 in indemnities. The cost may have been closer to \$1 million if other losses to the swine industry are counted. Though North Carolina had the lion's share of the problems in this region, the State deserves special credit for the great amount of work on hog cholera eradication, performed under adverse conditions. South Carolina and Tennessee were not without hog cholera problems. Florida, Louisiana, Maryland, and Mississippi had no more than two cases each. Puerto Rico's four cases were related to garbage feeding.

Western Region -- Confirmed Cases

Arizona - 0	New Mexico - 0
California - 0	Oklahoma - 0
Colorado - 0	Oregon - 0
Hawaii - 0	Texas - 43
Idaho - 0	Utah - 0
Nevada - 0	Washington - 0

The only State in this region with hog cholera problems was Texas. But Texas' 43 cases put the State in a tie with Indiana for the most cases in calendar year 1972. Feeding of improperly cooked garbage, movement of sick or exposed hogs, and other problems that can lead to hog cholera, were all present in Texas. But Texas had a new problem as well -- of live pigs and fresh pork coming in from Mexico in quantities not encountered before. Import restrictions and border surveillance were increased to check this problem source.

North Central Region -- Confirmed Cases

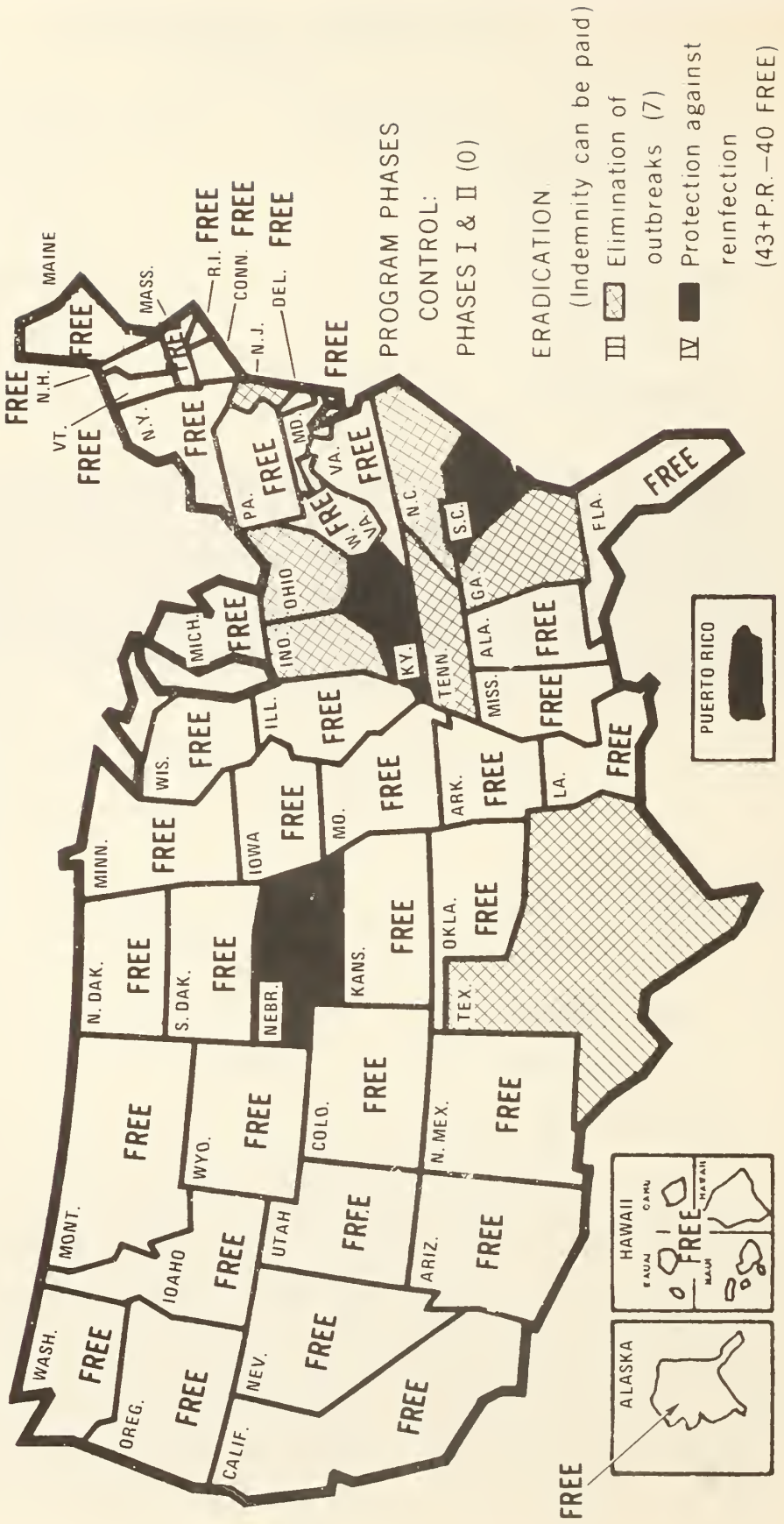
Illinois - 0	Montana - 0
Indiana - 43	Nebraska - 3
Iowa - 0	North Dakota - 0
Kansas - 2	South Dakota - 0
Minnesota - 0	Wisconsin - 0
Missouri - 0	Wyoming - 0

This region provided a "ready reserve" of highly trained, mobile eradication forces -- used during 1972 -- to fight disease outbreaks in other regions. Over 70 veterinarians and inspectors from the region served in the South and East in hog cholera eradication campaigns. But as producers of two-thirds of the nation's hogs, no State in this region can afford not to be concerned about hog cholera. What happened in Indiana is reason enough to want to keep hog cholera out of this region. Once cholera was in the State, flies are believed to have contributed to an insidious area spread that was not completely stopped until cold weather reduced the insect population. Authorities believe another outbreak in an area such as Carroll County, Indiana, could severely stress the nationwide eradication goal.

Cooperative State-Federal

Hog Cholera Eradication Program

JANUARY 1, 1973



QUARTERLY REPORT OF CONFIRMED HOG CHOLERA OUTBREAKS --- CALENDAR YEAR 1972

STATE	SUSPICIOUS REPORTS					POSITIVE CASES				
	1	2	3	4	TOTAL	1	2	3	4	TOTAL
Alabama	4	3	4	9	20	-	-	-	-	-
Alaska	-	-	-	-	-	-	-	-	-	-
Arizona	-	-	-	1	1	-	-	-	-	-
Arkansas	15	2	5	2	24	-	-	-	-	-
California	-	-	1	6	7	-	-	-	-	-
Colorado	2	4	2	1	9	-	-	-	-	-
Connecticut	-	1	-	1	2	-	-	-	-	-
Delaware	-	2	-	-	2	-	-	-	-	-
Florida	2	2	2	2	8	-	1	1	-	2
Georgia	1	76	21	173	271	-	2	2	2	6
Hawaii	-	-	-	-	-	-	-	-	-	-
Idaho	1	-	-	-	1	-	-	-	-	-
Illinois	8	11	12	21	52	-	-	-	-	-
Indiana	18	18	99	216	351	-	-	23	20	43
Iowa	13	12	17	14	56	-	-	-	-	-
Kansas	4	5	11	9	29	-	-	2	-	2
Kentucky	1	5	94	16	116	-	-	12	-	12
Louisiana	9	4	54	13	80	-	-	2	-	2
Maine	-	1	1	1	3	-	-	-	-	-
Maryland	15	9	15	24	63	-	-	-	2	2
Massachusetts	-	-	1	1	2	-	-	-	-	-
Michigan	9	5	5	9	28	-	-	-	-	-
Minnesota	-	3	10	5	18	-	-	-	-	-
Mississippi	2	3	4	16	25	-	-	1	-	1
Missouri	19	7	8	14	48	-	-	-	-	-
Montana	-	-	-	-	-	-	-	-	-	-
Nebraska	3	7	11	4	25	-	1	2	-	3
Nevada	-	-	-	-	-	-	-	-	-	-
New Hampshire	-	-	-	-	-	-	-	-	-	-
New Jersey	1	3	1	89	94	-	2	1	13	16
New Mexico	-	2	-	-	2	-	-	-	-	-
New York	2	1	-	1	4	-	-	-	-	-
North Carolina	596	501	316	480	1893	6	4	19	4	33
North Dakota	-	-	2	-	2	-	-	-	-	-
Ohio	9	8	35	73	125	-	-	9	9	18
Oklahoma	10	9	4	14	37	-	-	-	-	-
Oregon	-	-	-	-	-	-	-	-	-	-
Pennsylvania	-	-	1	76	77	-	-	-	3	3
Rhode Island	-	-	-	-	-	-	-	-	-	-
South Carolina	68	143	98	184	493	1	3	1	1	6
South Dakota	-	1	1	3	5	-	-	-	-	-
Tennessee	7	1	21	86	115	-	-	5	4	9
Texas	425	153	88	98	764	25	13	4	1	43
Utah	1	1	-	1	3	-	-	-	-	-
Vermont	-	1	-	-	1	-	-	-	-	-
Virginia	14	9	9	41	73	-	-	-	-	-
Washington	-	3	-	-	3	-	-	-	-	-
West Virginia	2	-	2	3	7	-	-	-	-	-
Wisconsin	-	-	-	-	-	-	-	-	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-
Puerto Rico	20	29	24	13	86	-	-	3	1	4
TOTALS	1281	1045	979	1720	5025	32	26	87	60	205

HOG CHOLERA ERADICATION PROGRAM

State	Date entered program phase					Date live vaccine stopped	Confirmed cases during calendar year									
	I	II	III	IV	FREE		1964	1965	1966	1967	1968	1969	1970	1971	1972	
Alabama	12-62	10-64	3-69	3-70	12-71	4-68	60	25	3	25	13	4	14	---	---	
Alaska	3-64	---	---	1-65	2-66	2-65	---	---	---	---	---	---	---	---	---	
Arizona	4-63	2-65	3-66*	---	5-71	8-68	7	---	---	4	1	1	1	---	---	
Arkansas	7-63	12-66	7-67	12-70	3-72	1-68	110	2	3	7	3	93	6	1	---	
California	3-63	1-64	1-65	1-70	10-70	7-69	7	4	---	1	1	2	---	---	---	
Colorado	11-63	8-65	1-66	---	10-71	---	3	---	---	---	---	---	---	---	---	
Connecticut	2-63	12-63	1-65	7-67	11-71	---	---	---	---	---	1	2	---	---	---	
Delaware	---	1-63	---	9-67	7-71	---	---	1	---	---	6	1	---	---	---	
Florida	1-63	7-63	9-63	2-67	9-68*	4-67	---	2	---	1	67	25	---	4	2	
Georgia	1-63	8-63	8-64	12-69	4-71*	2-67	175	286	26	33	200	30	7	---	6	
Hawaii	5-64	4-67	8-69	3-71	10-71	---	1	---	---	1	---	---	---	---	---	
Idaho	3-63	6-63	1-65	9-65	2-67	2-66	---	---	---	---	---	---	---	---	---	
Illinois	1-63	2-64	7-66	12-70	6-72	7-69	90	60	46	33	16	56	33	1	---	
Indiana	---	5-64	1-68	10-71	5-72*	10-69	88	33	23	26	8	32	11	3	43	
Iowa	1-63	6-63	7-67	9-70	3-71	7-69	185	65	57	59	21	22	1	---	---	
Kansas	2-63	8-63	4-69	10-70	10-71	7-69	22	12	12	26	11	8	4	---	2	
Kentucky	1-63	11-64	10-66	---	12-70*	1-68	20	25	8	9	23	19	---	---	12	
Louisiana	---	11-63	7-66	2-71	2-72	1-68	9	3	9	12	4	46	7	1	2	
Maine	4-63	3-64	---	---	6-71	7-68	1	1	---	---	---	---	---	---	---	
Maryland	1-63	10-64	10-65	7-67	10-71	7-68	8	2	5	2	---	78	11	---	2	
Massachusetts	2-64	6-64	8-68	9-71	4-72	---	4	1	---	1	1	12	18	3	---	
Michigan	8-63	4-64	---	12-65	4-67*	4-66	11	3	---	3	1	4	---	1	---	
Minnesota	---	3-64	7-68	7-69	3-72	6-69	31	18	38	46	22	9	4	3	---	
Mississippi	1-63	12-65	1-68*	11-70	7-72	1-68	11	30	12	13	25	51	60	1	1	
Missouri	---	1-64	7-66	6-71	3-72	3-68	114	36	37	69	47	218	64	1	---	
Montana	---	2-63	---	4-64	2-66	2-65	1	---	---	---	---	---	---	---	---	
Nebraska	1-63	8-64	10-67	4-71	10-71*	1-67	31	35	44	84	30	25	2	---	3	
Nevada	---	---	3-63	9-63	9-65	11-64	---	---	---	---	---	1	---	---	---	
New Hampshire	12-62	4-64	1-70	5-71	1-72	---	---	---	---	4	---	---	3	---	---	
New Jersey	6-63	9-64	8-66*	10-70*	---	---	4	3	3	13	3	1	5	2	16	
New Mexico	1-65	10-65	6-69	2-70	2-72	---	1	---	---	1	---	---	1	1	---	
New York	6-63	2-65	---	12-70	12-71	6-67	3	3	2	1	3	1	---	---	---	
North Carolina	3-63	12-64	1-67	9-71*	---	4-69	76	90	77	160	71	208	140	24	33	
North Dakota	9-64	12-64	12-65	8-67	9-68	9-67	---	---	7	14	1	---	---	---	---	
Ohio	2-63	2-65	1-68	7-71	4-72*	11-68	32	18	7	19	26	29	34	4	18	
Oklahoma	12-64	5-66	11-67	1-69	5-72	11-67	1	---	17	14	2	48	10	1	---	
Oregon	---	3-63	---	12-64	8-67	8-66	---	---	---	---	6	---	---	---	---	
Pennsylvania	6-64	6-65	1-68	12-70	7-71*	1-68	2	8	3	3	3	4	3	1	3	
Rhode Island	3-64	5-64	7-67	5-71	7-72	---	2	---	---	---	---	4	5	1	---	
South Carolina	3-63	2-64	7-68	3-71	1-72*	1-69	39	45	11	38	29	110	15	---	6	
South Dakota	7-63	4-64	7-68	---	7-70	7-67	35	12	21	38	3	7	---	---	---	
Tennessee	1-63	9-65	1-68	10-69	1-72*	7-67	12	20	20	34	52	24	3	1	9	
Texas	10-65	10-67	8-69	12-71*	---	---	1	8	10	20	61	213	87	55	43	
Utah	4-63	---	---	11-64	2-66*	11-64	1	---	---	4	1	---	---	---	---	
Vermont	---	---	---	9-63	9-64*	9-63	---	---	---	2	1	---	---	---	---	
Virginia	1-63	5-65	8-66	2-71	3-72	7-68	6	18	12	12	44	64	116	3	---	
Washington	12-62	1-64	---	7-64	8-67	8-66	---	---	---	---	2	---	---	---	---	
West Virginia	4-64	5-65	10-68	---	10-69	7-68	2	---	---	---	---	---	1	---	---	
Wisconsin	6-63	8-63	---	2-66	2-69	1-68	4	---	4	2	---	---	---	---	---	
Wyoming	12-62	7-63	7-63	10-63	9-68	7-67	---	---	2	1	---	---	---	---	---	
Puerto Rico	1-63	12-65	12-67	3-71	---	3-69	6	12	15	19	20	25	10	6	4	
Confirmed cases							1,216	881	534	854	822	1,481	679	118	205	
Suspicious cases							1,664	1,701	1,499	3,143	4,553	6,484	5,716	3,878	5,025	

*Ariz. to Ph II, 3-70; Fla. to Ph IV 10-68, to Free 4-70 to Ph IV 1-71, to Free 2-72; Ga. to Ph III 10-72; Ind. to Ph III 9-72; Ky. to Ph III 9-72, to Ph IV 12-72; Mich. to Ph IV 8-69, to Free 2-70, to Ph IV 5-71, to Free 2-72; Miss. to Ph II 7-68, to Ph III 7-69; Neb. to Ph III 8-72, to Ph IV 11-72; N. J. to Ph II 6-68, to Ph III 2-69, to Ph III 12-72; N. Car. to Ph III 4-72; Ohio to Ph III 9-72; Pa. to Ph IV 10-71, to Free 2-72; S. Car. to Ph III 5-72, to Ph IV 7-72; Tenn. to Ph III 10-72; Texas to Ph III 12-71; Utah to Ph IV 11-67, to Free 11-68; Vt. to Ph IV 2-68, to Free 2-69.